

**Before the
Federal Communications Commission
Washington, D.C. 20554**

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| In the Matter of |) | |
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| Spectrum Policy Task Force Seeks Public |) | DA 02-1311 |
| Comment on Issues Related to Commission's |) | |
| Spectrum Policies |) | ET Docket 02-135 |
| |) | |

**Comments of Personal
Telecommunications Technologies, Inc. (PTTI)**

Introduction

We welcome this opportunity to provide comments to the Federal Communications Commission to assist with policy making which will make efficient use of scarce wireless spectrum. Our company, Personal Telecommunications Technologies, Inc. (PTTI), is a consulting company actively promoting innovative technologies and applications of wireless communications.

Today, new technology is emerging with the flexibility to make more efficient use of heretofore underutilized wireless spectrum. These technological advances allow for the sharing of spectrum without any harmful interference to incumbent licensees. (The Commission has recognized this in recent rulemaking FCC 02-116 concerning MVDDS, where a new terrestrial service has been authorized on a non-interfering basis to existing incumbent DBS providers.)

Comments

The Commission has request comments on its current two approaches:

Under one model, the Commission has granted existing licensees additional flexibility so that incumbents can migrate spectrum to its highest value use. A second model has involved the Commission reallocating bands for flexible use with geographic service areas and auctioning "overlay" licenses and unassigned "white space" spectrum to new and existing licensees.

We support the increased efficient use of spectrum resulting from both approaches. However, we suggest that use of the second approach be expanded for increased sharing of licensed and unlicensed services in bands and service areas where it may be possible.

The unlicensed services might be considered “underlay” within the geographic areas of licensed services.

In particular, the Commission has asked in question 5:

Should more spectrum be set aside for operating unlicensed devices?
Should the kinds of permissible unlicensed operations be expanded? What changes, if any, should be made to the rules to accomplish this? Because of the commons aspects of unlicensed use, is there concern that, as congestion rises, spectrum may not be put to its highest valued use? If so, what policies might be considered to anticipate this problem?

We suggest that the Commission explore broadening use of unlicensed low-power RF devices, such as those allowed in 47 CFR part 15, to other bands subject to restrictions to prevent harmful interference to licensed services, while accepting interference from licensed services. The rapid deployment of WLANs within the last year is an example of the tremendous potential of making broadband access quickly available to the public using unlicensed devices. This has made broadband wireless technology and applications available quickly—and efficiently—to organizations such as schools, who are able to provide high-speed Internet access to greater numbers of students without having to expend substantial resources on cable wiring. Indeed, IBM is in the process of providing wireless access infrastructure to the New York City school system. In addition, the Commission has recognized the new capabilities of technology for these devices in relaxing restrictions on the type of technology allowed in the part 15 bands (in a recent amendment to part 15, FCC 02-151, to allow a new class of digital devices in the 915 MHz, 2.4 GHz, 5.7 GHz bands).

Frequency-agile technology via software defined radio technology can be used to monitor power in spectrum bands and thus determine where channels might not be yet used or not available for licensed services due to buildout and deployment or environmental or topological considerations. Where there is evidence of such potentially available spectrum, these can be used by unlicensed frequency-agile RF devices on a non-interfering basis, subject to restrictions to prevent the use of channels allocated to public safety or government applications. These devices could be deployed quickly to make use of spectrum without interfering with licensed services.

Allowing low-power unlicensed devices that will not interfere with licensed services could be tried on specific bands. Because of the economics of producing and marketing certified consumer oriented low-power devices for widespread use, these would necessarily be in the under-3 GHz band for now (though as technology advances, as the Commission has recognized in FCC 02-180, even the upper millimeter wavelength bands will become accessible.) To forestall issues of previous payments for licensed services and effective dates of spectrum ownership, this approach might be trialed first for frequency bands and areas where licenses were issued without competitive bidding, subject to restrictions for public safety and governmental uses. As appropriate, temporary authorizations could be provided and demonstration projects promoted. These would be

accompanied by studies with data describing how successfully harmful interference with licensed services was avoided.

Such a trial approach could be then expanded as the Commission's technical understanding is refined. In the meantime, a variety of manufacturers could target equipment to these bands, and, as necessary, coordinate standards to prevent interference among the unlicensed devices. Although equipment type certification would be required (e.g., software radio rules as described in FCC 01-264), because of the unlicensed nature of this equipment, no mutual exclusivity and licensing would be required. As a result, such equipment might be quickly deployed without interfering with authorized licensed services.

Conclusion

Part 15 has provided a very successful model for future policy and rule making. The model is a success for the many businesses and consumers who can quickly make use of the low-cost but technologically advanced devices. We recommend that the Commission thus take the next step to explore the potential value of Part 15's proven approach to other areas of spectrum usage, and allow the use of certified unlicensed RF devices in additional spectrum bands under 3 GHz, under conditions where the devices cause no harmful interference to licensed services, but can accept interference from all licensed services.